1: Rivers E-5 (ca. 1901-02) 1906 Toda

161 seems at present to exist may be due, wholly or in part, to
847 the diminution of infanticide.

There is one indication that female infanticide has almost
163 entirely ceased during the last five years, and even that there may now be an excess of female births. In the table of ages given on page 469, it will be seen that the pedigrees record more girls than boys of five years and under. There is no reason why my record of such young children should have been more defective for one sex than for the other, and the proportion here may be approximately correct.

TWINS

845 Twins are called *ömumokh*, and it is the custom to kill one
847 of them, even when both are boys. If they should be girls, it is probable that both would be killed, or, at any rate, would have been killed in the past.

There is one case of twins in the genealogies. Iraveli, the wife of Kwötuli and Nudriki (8), gave birth to twins about twelve years ago. Both were boys, and I was first told that one had died shortly after birth, but later inquiries made it almost certain that the boy had been killed. Some time after the birth of the twins, one of the buffaloes of Kwötuli and Nudriki is said to have had a calf with one body, two heads, and four legs. The buffalo died before the calf was born, and the monstrosity was found by the Kotas, to whom the body was given. It was generally expected that something would happen to Kwötuli or Nudriki, but they have since been very prosperous.

THE DETERMINATION OF AGE

805 This is a suitable place to say a word about the method I
128 adopted to ascertain the ages of the Todas. Like all people at a low stage of culture, the Todas are very uncertain about their ages, though their knowledge is more accurate than that of many peoples. Every Toda knows, however, whether he is older or younger than another, this fact determining the

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names and salutations they give to one another, as we shall see in the next chapter. A few of the younger men seemed to have accurate knowledge of their ages, and building up on this basis, and with a knowledge of the relative ages of the different members of the community, it became possible to arrive at estimates which probably do not deviate very widely from the correct ages; even in the case of the older people, I do not believe that my estimated ages are likely to be more than five years out in any case. As already mentioned (see p. 416), the Todas make use, in the estimation of age, of their belief in the eighteen-year period of a flower, and the ages so estimated in a few cases agreed fairly with those arrived at in other ways.

Among those now alive, it seemed that the usual time which separates the birth of two children of the same mother is about three years, and I have taken this time as the rule in estimating the ages of all those whose names are included in the genealogies. Similarly, so far as I could tell, women begin to bear children when about eighteen to twenty years of age.

The ages of the four groups given in the table on p. 474 were calculated on the assumptions that a woman had her first child when twenty years old, and that the interval between the births of two children was three years.

The oldest Toda now living is Kiugi (57). He looks an extremely old man, and is said by the Todas to be nearly a hundred years of age. There is evidence which makes it probable that he is at least eighty or ninety. Kòrs, the father of Kiugi, performed the *pursütpimi* ceremony before the birth of Teitchi (52) (see p. 564). Teitchi's grandson, Kuriolv, is now about fifty-four years of age. When Kòrs gave the bow and arrow he may have been only a young boy, and if we assume that he was fifteen years old, that Teitchi and Pareivan had their first children when twenty years old, and that the interval between the birth of Pilzinl and that of Pareivan was six years, it would make the age of Kòrs, if he were still alive, 115. If Kiugi was born when his father was twenty years old, it would make his age ninety-five. If, on the other hand, we assume that Kòrs gave the bow and arrow when

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tion and competition, expose its people to vicissitudes from which the Toda is entirely exempt—was 1 in 45, or 2·23 per cent. per annum.[6]

λ. We shall find in a succeeding chapter on Infanticide, Table No. 7,[1] that of 26 M + 20 F, or 46 children, who—judging from the ages of the mothers—were of different ages, varying from 1 to 20 years, 5 died. In other words, 10·87 per cent. of children born, die of *youthful* maladies.

μ. If, from the same Table, we calculate the number of children, whose mothers being less than 27 years must themselves be under 10 years of age, we see that of 23 born, 3 died; or that 13 per cent. died of *infantile* disorders.

An average taken of the mortality of several countries in Europe, gives 38·3 per cent. of children who died in the year 1825, 'from birth to the age of 10.'[7]

Not to fatigue my readers with further preliminaries, I will now submit the brief calculation which is to show whether the Todas are dying out or increasing in numbers; and at what rate of progress. Mathematical accuracy cannot, with justice, be expected; for, even with the most perfect census possible, there are obvious reasons why exactness is unattainable. I will premise, in the words of Dugald Stewart, that 'the rate at which the multiplication of different races would go, seems to depend on the following particulars; (1) the age at which the parent becomes prolific; (2) the time that elapses in pregnancy; (3) the frequency of breeding; (4) the numbers of each brood; (5) the period during which the parent continues prolific.'[8]

Suppose then we begin our reckoning with 177 married Todas of both sexes. Paragraph (ζ) of this chapter informs us that of this 177, there will be 100 men and 77 women.

Tables Nos. 6 and 7[2] show that the average of women—

[6] Adam Smith, 'The Wealth of Nations.'
[7] Malthus, 'Essay on the Principle of Population.'
[8] Dugald Stewart, 'Lectures on Political Economy.'

1. [See p 120, category 116 -- Analyst]
2. [See pp. 119 and 120, category 116 -- Analyst]

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including a proportion of the sterile—bear children for 20 years, at the rate of 6 children for each woman.

163 We know from paragraph (λ), that of 100 children born, 165 10·87 die before they attain to the age of 20.

The natural death-rate of *all ages* is allowed in paragraph (κ) to stand at 2 per cent. per annum; which rate is here taken for the proportion of *adults* only, who die—a very high figure. Hence 18·29 per cent. will give the number of deaths during the ten years which forms the *mean* period of child-bearing.

Calculation.

77	Number of women who commence to bear children.
77−18·29= 58·71	Average number of women who bear children for 20 years.

Then

58·71 × 6 = 352·26	Number of children born to those women at the expiration of 20 years.

Deduct

52·26 ÷ 10·87 = 32·41	The number of children who die before attaining 20 years.
319·85	The number of children who survive at the expiration of 20 years.

During these 20 years, the original 177 people have decreased by 2 per cent. per annum; or 33·21 per cent. = 58·78.

Thus

177−58·78 = 118·22	
438·07	

161 We see therefore that in the course of 20 years, the 177 Todas have theoretically expanded to 438. Thus doubling in 16·2 years. In the back settlements of America, where

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TABLE No. V.

Information deduced from 'Statistics of Toda Families,' Table No. IV.

163

No. on the List	Present ages of: Wives	Husbands—oldest	Child—oldest	Child—youngest	Calculated ages when: Wives married	Oldest Husbands married	Wives commenced child-bearing	Wives left off child-bearing	Children: Number alive	Number dead	Number born	Remarks
1	27	28	12	2	14	15	15	—	4	0	4	Child-marriage.
2	25	28	12	2	13	16	14	—	3	1	4	Child-marriage.
3	40	73	23	20	14	47	15	30	5	0	5	
4	63	70	43	22	19	24	20	53	4	1	5	
5	60	63	42	20	17	22	18	40	5	0	8	
6	D	76							4	2	6	
7	D	52	0	0					0	0	0	
8	D	77	25	8					5	4	9	
9	50	68	0	0	45	63			0	0	0	Barren.
10	38	50	20	6	23	25	24	—	6	1	7	
11	24	25	0	0	20	21	20	—	1	0	1	
12	18	20	1	1	16	20	17	—	1	0	1	
13	28	29	0	0	27	28	—	—	0	0	0	
14	18	22	2	0	16	16	16	—	0	1	1	
15	40	58	25	8	24	32	25	32	4	2	6	
16	20	30	2	2	19	27	20	—	1	0	1	
17	75	79	50	28	24	28	25	40	6	4	10	
18	33	40	20	10	28	23	29	—	4	1	5	
19	30	35	20	8	29	24	30	—	3	0	3	
20	29	36	0	0	27	24	—	—	0	0	0	Child-marriage.
21	50	—	33	28	26	—	27	32	3	2	5	
22	48	—	30	8	24	—	25	37	5	3	8	
23	42	50	20	3	29	27	30	—	4	2	6	
24	20	28	3	0	23	21	27	—	2	0	2	Child-marriage.
25	28	25	0	0	27	24	—	—	0	0	0	
26	26	29	8	2	18	25	20	—	2	0	2	
27	55	70	40	14	24	30	25	41	3	3	6	
28	60	60	34	20	25	31	26	40	4	5	9	
29	24	28	6	6	16	20	18	—	1	0	1	
30	22	25	0	0	21	24	—	—	0	0	0	
31	28	24	0	0	17	23	—	—	0	0	0	
32	30	35	0	0	22	27	—	—	0	0	0	Barren.
33	19	30	0	0	16	27	—	—	0	0	0	
34	19	30	0	0	17	28	—	—	0	0	0	
35	28	40	3	3	23	35	25	—	1	0	1	
36	45	50	30	2	14	19	15	43	6	2	8	
37	45	45	28	9	16	16	17	36	6	3	9	
38	25	28	22	1	19	15	23	—	2	0	2	Child-marriage.
39	24	23	0	0	20	19	—	—	0	0	0	Child-marriage.
40	25	30	20	1	14	19	15	—	2	1	3	
41	24	24	0	0	22	22	—	—	0	0	0	Child-marriage.
42	50	—	30	14	19	—	20	36	6	0	6	
43	55	—	30	7	24	—	25	48	3	6	9	
44	40	60	28	5	22	31	22	35	5	3	8	Child-marriage.
45	45	55	29	12	15	25	16	33	2	2	4	
46	30	50	22	2	27	37	28	—	5	0	5	
47	22	22	0	0	20	22	—	—	0	0	0	Child-marriage.
48	22	25	0	0	9	22	—	—	0	0	0	Child-marriage.
49	55	61	35	15	19	25	20	40	4	1	5	
50	24	28	0	0	14	18	—	—	0	0	0	Barren.
51	26	26	20	4	14	14	16	—	3	0	3	Child-marriage.
52	30	35	0	0	14	19	—	—	0	0	0	
53	65	70	42	24	22	27	23	41	4	6	10	
54	42	56	25	25	26	30	27	27	1	0	1	
55	30	26	1	1	20	16	19	—	1	0	1	Child-marriage.

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TABLE No. VI.

To ascertain the 'ages at which Toda women commence and leave off Child-bearing.'

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Compiled from Tables No. IV. *or* V.

Commenced Child-bearing					Left off Child-bearing				
No. on the List	Present age of Wife	Age of her oldest Child	Calculated age when she commenced Child-bearing	Remarks	No. on the List	Present age of Wife	Age of her youngest Child	Calculated age when she left off Child-bearing	Remarks
1	27	12	15	In the compilation of this abstract, the younger women have, as a rule, been taken, as conducive to accurate results.	3	40	10	30	In this abstract, only those women have been entered, who from their own age or from that of the youngest child, appear to have left off child-bearing.
2	25	11	14		4	65	12	53	
3	40	25	15		5	60	20	40	
10	38	24	14		15	40	8	32	
11	24	2	22		17	75	35	40	
12	18	0	18	P	21	50	18	32	
14	18	2	16		22	45	8	37	
15	40	25	15		27	55	14	41	
16	22	2	20		28	60	20	40	
19	30	10	20		36	45	2	43	
22	45	20	25		37	45	9	36	
23	42	22	20		42	50	14	36	
24	20	3	17		43	55	7	48	
26	28		20		44	40	5	35	
29	24	6	18		45	45	12	33	
35	28	3	25		49	55	15	40	
36	45	30	15		53	65	24	41	
37	45	28	17		54	42	25	17	
38	25	12	13						
40	35	10	15						
44	40	28	12						
45	45	29	16						
46	30	12	18						
51	26	10	16						
54	42	25	17						
55	20	1	19						
26			452		18			674	
			26	= 17·4 (Average age at which the women commence child-bearing.)				18	= 37·4 (Average age at which the women leave off child-bearing.)

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TABLE No. VII.

To ascertain the 'size of Toda Families:' the 'period during which the women bear children;' and the 'number of years intervening between the birth of children.'

Compiled from Tables No. IV. *or* V.

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No. on the List	Calculated age when commenced Child-bearing	Calculated age when left off Child-bearing	Total number of years in Child-bearing	Number of Children born	Remarks
Wives who have left off Child-bearing					
3	15	30	15	5	The total 'number of children born' divided by the 'total No. of wives on the list' gives the average 'size of Toda families'; or $\frac{114}{20} = 5\cdot7$. But if the barren women be excluded from the calculation, then $\frac{114}{17} = 6\cdot7$ is the average. The total 'number of years in child-bearing' divided by the 'No. of wives on the list,' gives the average 'period during which the women bear children'; or $\frac{333}{114} = 2\cdot9\cdot6$.
5	18	40	22	5	
15	15	32	17	6	
17	15	40	25	10	
21	17	32	15	5	
22	25	37	12	8	
27	15	41	26	6	
28	26	38	12	9	
36	15	43	28	8	
37	17	36	19	9	
42	20	36	16	6	
43	25	48	23	9	
44	12	35	23	8	
45	16	33	17	4	
49	20	40	20	5	
53	23	41	18	10	
54	17	42	25	1	
17			333	114	
9			0	0	
32			0	0	
50			0	0	
20			333	114	

No. on the List	Calculated age when commenced Child-bearing	Apparent present age	Total number of years in Child-bearing	Number of Children born	Remarks
Wives continuing in Child-bearing					
			333	114	The total 'number of years in child-bearing' divided by the total 'number of children born' gives the average 'number of years intervening between the birth of each child'; or $\frac{500}{167} = 3$.
1	15	27	12	4	
2	14	25	11	4	
10	14	38	25	7	
11	22	24	2	1	
12	18	18	1	1	
14	16	18	2	1	
16	20	22	2	1	
18	19	35	16	5	
19	20	30	10	3	
23	20	42	22	6	
24	17	20	3	2	
26	20	28	8	2	
29	18	24	6	1	
33	25	28	3	1	
38	13	25	12	2	
40	15	25	10	3	
46	18	30	12	5	
51	16	26	10	3	
55	19	20	1	1	
			500	167	

NOTE.—The wives in child-marriages, and those who, having lately married, have not yet given birth to children, have been excluded from this Table.

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it is advisable to mention, that although as much patient care was taken to collect the evidence it contains, with the same accuracy as that bestowed on the Census, yet there are reasons why it could not be attained. For the latter purpose the people were nearly all present; whereas in the process of collecting statistics, dependence had, in the main, to be placed on the statement of uneducated people describing births and deaths, many of which took place long years before. Supposing even they remembered in all cases the number of each sex that died, they would still have to represent their own notions of the ages at which they did so, and the period that had elapsed since those events happened. All, therefore, that can with confidence be asserted, is, that the best was done in the face of these inevitable difficulties to eliminate error.

For instance—and one will suffice—if it was required to ascertain the particulars of a child who had died. The mother was present; the husband also sat close by. Some relation, also present, had a wife, or husband, or child, as the case might be, who had been a playfellow of the departed. Or the child was said by its mother to have been either so much older or so much younger than one standing before us.

For the sake of those who wish to utilise the statistics, Table No. 5 has been compiled from Table No. 4[1] which will render it easy to extract the most valuable points of information.

In order to obtain reliable data on which to base deductions as to Toda nature and Toda progress, it seems a matter sufficiently important, to record with all the exactness that available information admits of, certain averages relative to the size of families, and the ages at which their women commence and also leave off child-bearing. The details of these points of information, collated from Tables No. 4 or 5, will, therefore, be found tabulated in Nos. 6 and 7 Tables. A point has been made, not to omit any of the instances of Table 4 or 5, that might prove of value; only the women in child-marriages, or those who having lately married, have not yet given birth to progeny, have been left out.

[1] [Table No 4 appears on pp. 112-113 Category 116 or 162 --Analyst]

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We see from these tables that,

I.	The *earliest* age at which women commence child-bearing is about . .	14 years.
II.	The *average* age at which women commence child-bearing is	17·4 years.
III.	The average age at which women leave off child-bearing is	37·4 years.
IV.	Women bear children during a period of	19·6 years.
V.	The average interval between the birth of children is	3 years.
VI.	Including barren women, the average size of families is	5·7 children.
VII.	Exclusive of barren women, the average size of families is	6·7 children.

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TABLE No. VIII.

Compiled from 'Statistics of Toda Families,' Table No. IV., in order to ascertain the progress made towards checking Infanticide. Arranged according to the 'present ages of Wives.'

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Present Ages of Wives	No. on the List	Detail: Progeny: Alive M.	Alive F.	Dead M.	Dead F.	Born M.	Born F.	Abstract: Progeny: Alive M.	Alive F.	Dead M.	Dead F.	Born M.	Born F.	Proportion of females to 100 males: A.	D.	B.	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
65	4	2	2	2	2	4	4										
65	53	2	2	5	1	7	3										
60	5	3	2	0	0	3	2	14	7	9	8	23	15	50	88·9	65·2	
60	6	4	0	0	2	4	2										
60	28	3	1	2	3	5	4										
55	27	1	2	3	0	4	2										
55	43	4	1	2	2	6	3										
55	49	3	1	1	0	4	1	17	9	9	5	26	14	52·9	55·6	53·8	
50	8	3	2	2	2	5	4										
50	21	2	1	1	1	3	2										
50	42	4	2	0	0	4	2										
45	22	3	2	1	2	4	4										
45	36	3	3	1	1	4	4										
45	37	3	3	2	1	5	4										
45	45	1	1	2	0	3	1										
42	23	2	2	2	0	4	3	18	20	12	5	30	25	111·1	41·7	83·3	
42	54	0	1	0	0	0	1										
40	3	3	2	0	0	3	2										
40	15	0	4	2	0	2	4										
40	44	3	2	2	1	5	3										
38	10	5	1	1	0	6	1										
35	18	2	2	0	1	2	3										
30	19	0	3	0	0	0	3										
30	46	4	1	0	0	4	1										
28	35	1	0	0	0	1	0										
28	26	2	0	0	0	2	0										
27	1	2	2	0	0	2	2										
26	51	2	1	0	0	2	1										
25	2	1	2	1	0	2	2	24	17	2	3	26	20	70·8	150	77	
25	38	1	1	0	0	1	1										
25	40	1	1	0	1	1	1										
24	11	0	1	0	0	0	1										
24	29	0	1	0	0	0	1										
22	16	1	0	0	0	1	0										
20	24	1	1	0	0	1	1										
20	55	1	0	0	0	1	0										
18	14	0	0	0	1	0	1										
		73	53	32	21	105	74							72·6	65·6	70·5	

No families have been omitted, in extracting from 'Statistics of Toda Families,' except those whose returns appear to be doubtful, or are valueless to the subject under review.

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65 years down to the youngest married women, if we would trace the abatement of infanticide.

847 It is much to be regretted that the statistics of Table No. 8 162 do not afford a record so complete as could be desired; even 847 to the degree I had fondly calculated on their doing, in the 163 course of our careful enquiries in the field. The instances, though certainly few in number, should distinctly have pointed to the change that was being effected in the course of forty-eight years; by enabling us to trace some sort of declining scale in the contrast of the sexes. The disproportion between males and females is indeed great in the Table, but it neither increases nor lessens in any form of sequence.

I have allowed the Table a place in these pages, despite its acknowledged deficiencies, and notwithstanding that the statistics, taken by themselves, give every appearance of the venerable practice being in full vigour, whilst I am fully convinced by the circumstantial evidences which I have given, that such is not the truth. I have done so, because it thus obtains a value, in showing that *the practice of infanticide may be extinct, whilst statistics indicate its actual prevalence:* that, in fact, the strange numerical difference in the sexes, which the census shows to amount to 25 per cent., implies with certainty, only that infanticide has *lately* been practised. If the custom were in its fullest possible force, consistent with the preservation of the race, the sexual divergence would be as great as 100 to 33·3; a proportion which allows one girl on an average, to every family—with less than which allowance, the race could not survive.

My readers will have noticed in Chapter XI. the suggestion, that a curious result of long continued infanticide, has been to create a male-producing variety of the human race.

165 It will be observed that in the Table $\frac{1}{A}$ the proportion of females who have died, to 100 males, is 65·6: whilst of those alive, it is 72·6. This discrepancy bears evidence to the inaccuracy of the statistics. Judging from the circumstances

$\frac{1}{A}$ [See p. 197, Category 163 -- Analyst]